



distinguished an anterior protuberance, which was already visible in the embryo when free in the water. The examination of the mollusca did not furnish conclusive results. Most of the individuals contained Cercariæ; but these belonged to several species; so that it was impossible to make out which of them were derived from *Distomum nodulosum*. However, by far the most abundant form in *Paludina impura* was a species furnished with an aculeus, and resembling *D. nodulosum* in the form and dimensions of its sucking-disks. This Cercaria is developed in sporocysts, completely destitute of structure, but often presenting a protuberance resembling that seen in the larvæ which penetrated into the interior of the Annelids. The sporocysts increase by transverse division; they never contain more than a few Cercariæ, and sometimes only a single one. In the *Paludina* these Cercariæ become encysted, losing their tails and at the same time their aculeus, which the author saw detach itself. Specimens of *Paludina impura* are found containing only sporocysts and free Cercariæ, others which contain only encysted Cercariæ, and others, again, with all three forms.

The author administered the cysts to four small perch. These fishes were opened two hours afterwards; and in two of them M. von Linstow discovered a certain number of young *Distoma* which proved to be *D. nodulosum*. These experiments therefore seem to prove that the ova of these Trematoda fall into the water, from which the embryos pass into Mollusca, from which they reach the fishes without penetrating into an intermediate host.

A curious fact observed in this species is its presence under a different form in *Acerina cernua*. The author has found on the outer surface of the intestine of this fish delicate cysts which, when ruptured, gave issue to young specimens of *D. nodulosum*, presenting all the characters of the species. Some of them already possessed the vitellogene and the germinogene, the testes and the cirrus-sac. He has also found the same cysts with the same contents, together with free young *D. nodulosa* in the same state of development, in the intestine of *Perca fluviatilis*, which they had evidently reached with an individual of *Acerina cernua*. The walls of the cysts are much more delicate than those occurring in *Paludina impura*; the cysts are also much larger, measuring 0.4 millim. or more instead of 0.07 millim.; moreover the animal contained in them is much further advanced in development.

The author explains in the following manner the presence of the parasite under these exceptional circumstances. There must be two modes of transport of the Cercariæ into fishes. In the first case the fish eats a *Paludina* containing encysted Cercariæ; the Cercariæ are set free by the digestion of the cysts and attain their sexual state in the intestine of the fish. In the second case the *Acerina cernua* eats a mollusk containing free Cercariæ, or else these larvæ pass directly into the fish. They pierce the intestine by means of their aculeus and encyst themselves on the outside of the wall of that organ. During their course through the intestine they increase in size, because they find suitable nourishment there.

Leuckart has laid down the principle that only the encysted *Distoma*

are transferable. M. von Linstow thinks that this opinion is correct if we understand thereby that a state of encystation is always necessary before a *Distomum* can be developed freely in the intestine. If a free *Cercaria* reaches its definitive host, it may continue to live there, but it becomes encysted.—*Archiv für Naturg.* 1873, p. 1; *Bibl. Univ.* August 15, 1873, *Bull. Sci.* p. 328.

*Manufactured Glassrope.* By Dr. J. E. GRAY, F.R.S. &c.

There have lately been sold at a natural-history sale two or three specimens of the glassrope (*Hyalonema*) from Japan of an extraordinary thickness, made up of a very large number of siliceous fibrous spicules, which at the free end diverge in the most extraordinary manner into a bunch six or seven inches wide. The size, and especially the fibres being separated from each other and twisted in different directions, so that the spiral turns did not match each other, excited my suspicions, which were confirmed by the mass of black pitchy matter with which their base was covered.

The larger specimen was made to appear the most perfect, and was about four inches in circumference about three inches from the base. This part, above the black pitchy substance, is covered with the usual bark for about two or three inches height. When this animal coat or so-called bark was carefully examined, it was found to have no real connexion with the spicules, and to be made up of pieces of bark taken from other specimens and fixed across the bunch of filaments, the grooves between the pieces looking like wrinkles. These specimens are evidently made for sale, probably by the same French taxidermist that made the specimens formerly noticed.

I am sorry to say they found purchasers at prices which the separate glassy filaments of which they are composed would not have fetched. The larger specimens have a usual-sized specimen, partly denuded of its bark, attached by a black pitchy substance to its base.

*Note on certain Species of Phasmidæ hitherto referred to the Genus Bacillus.* By JAMES WOOD-MASON, of Queen's College, Oxford.

The discovery which I have to announce, viz. that the true males of *Bacillus insignis* and its allies are to be sought in insects of the type of *Lonchodes stilpnus*, Westw., *Lonchodes pseudoporus*, Westw., *Lonchodes Russellii*, Bates, &c., affords another instructive illustration not only of the extreme imperfection of our knowledge of this family of Orthopterous insects, but also of the utter futility of any attempt satisfactorily to distribute the species composing it into genera, until we shall be in possession of the true pairs of many more of the described species.

In 1869 M. Henri de Saussure\* proposed, prematurely as it turns out, to divide the genus *Bacillus* into three subgenera—one (*Bacillus*) for the reception of *B. Rossii* and its allies, another (*Ramulus*) for *B. humilis*, Westw., *B. carinulatus*, Sauss., &c., and a third (*Baculum*) for *B. cunicularis*, Westw., *B. ramosus*, Sauss., &c.; and in the first part of my memoir on the *Phasmidæ* †, I provisionally referred to

\* Mém. Orth. fasc. ii. pp. 111 & 112.

† Journ. A. S. B. 1873, pt. ii. no. 1.